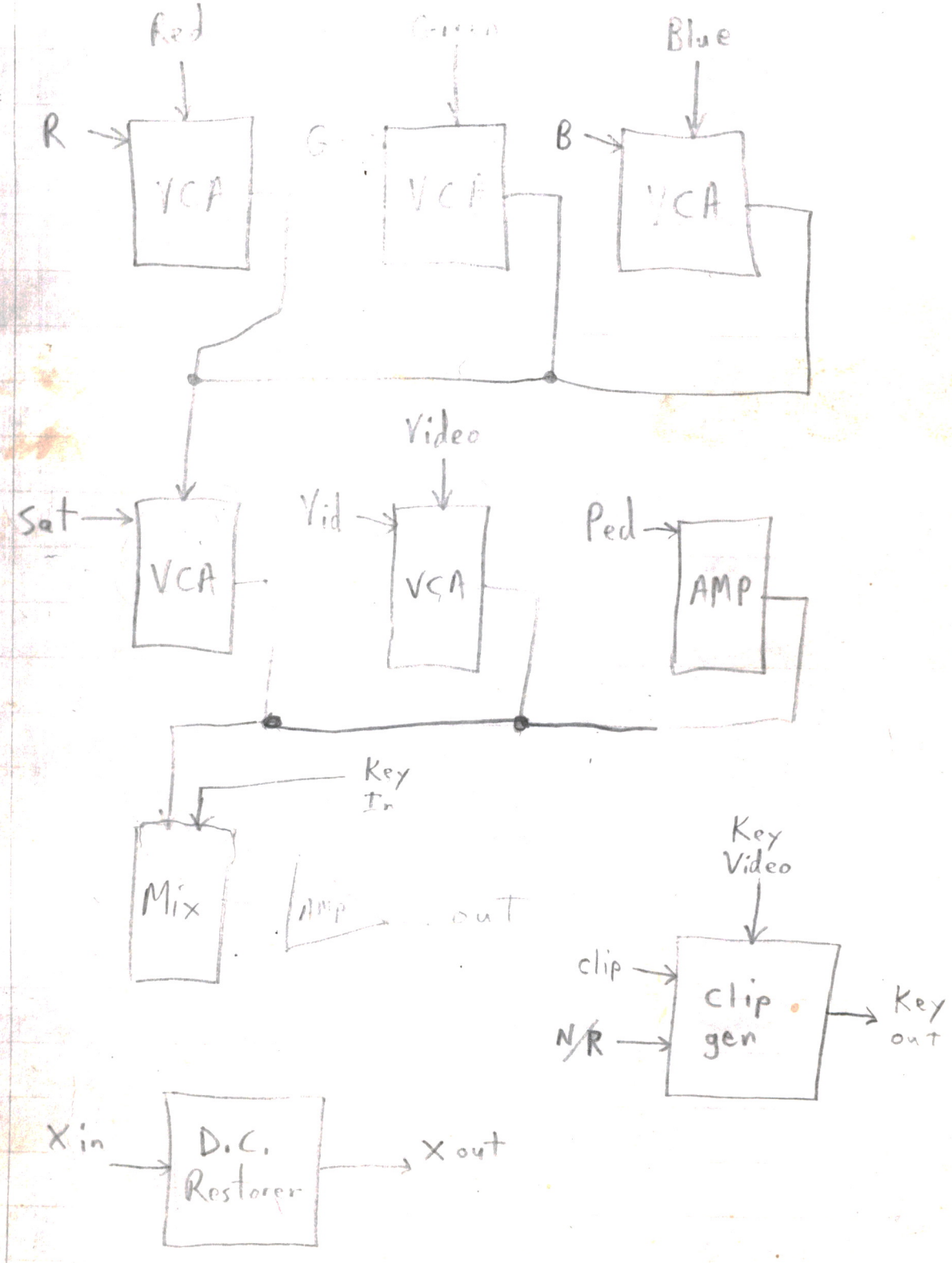
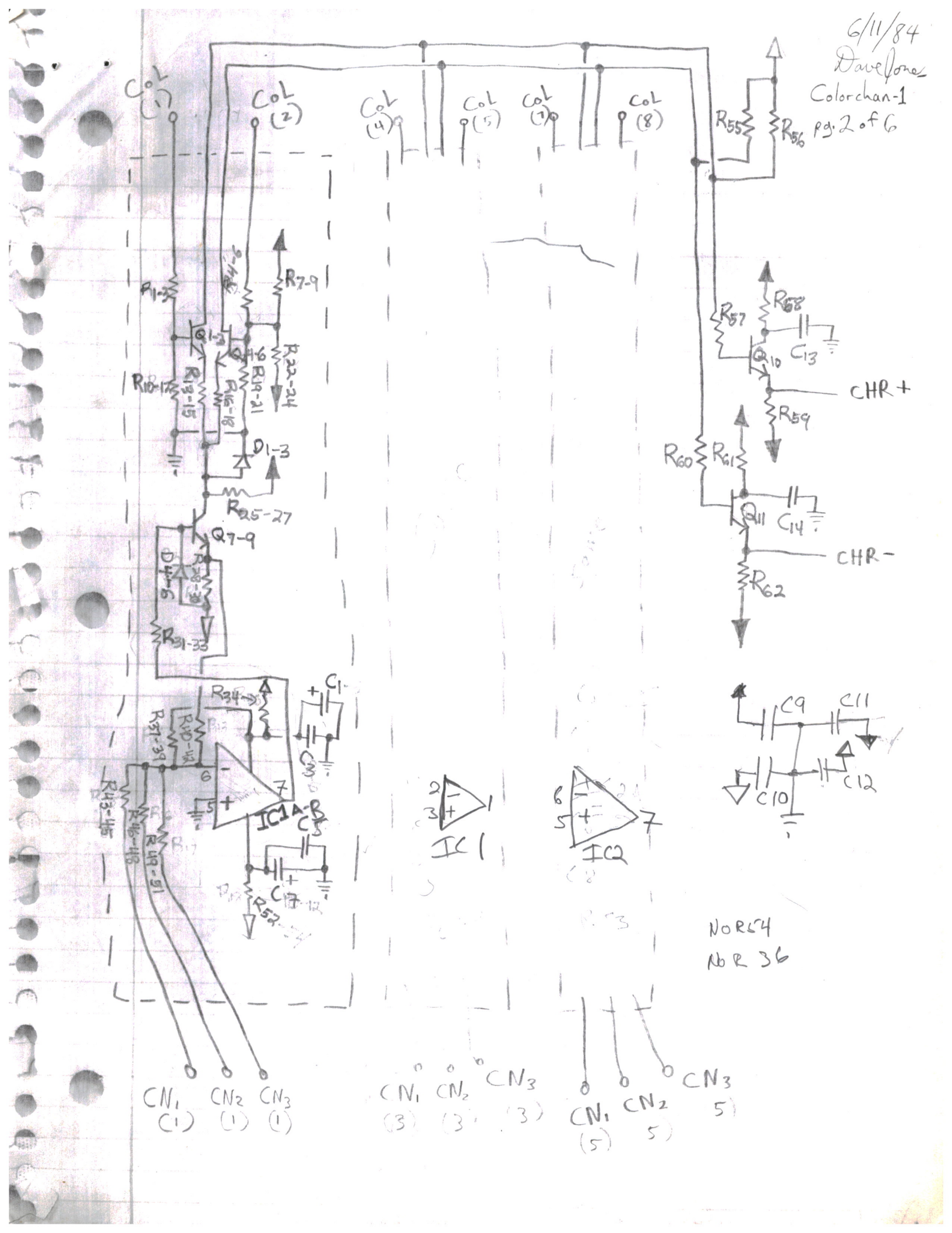
6/11/84
DG
Colorchan-1
pg. 1 of 6



6/11/84
Dave Jones
Colorchan-1
pg. 2 of 6



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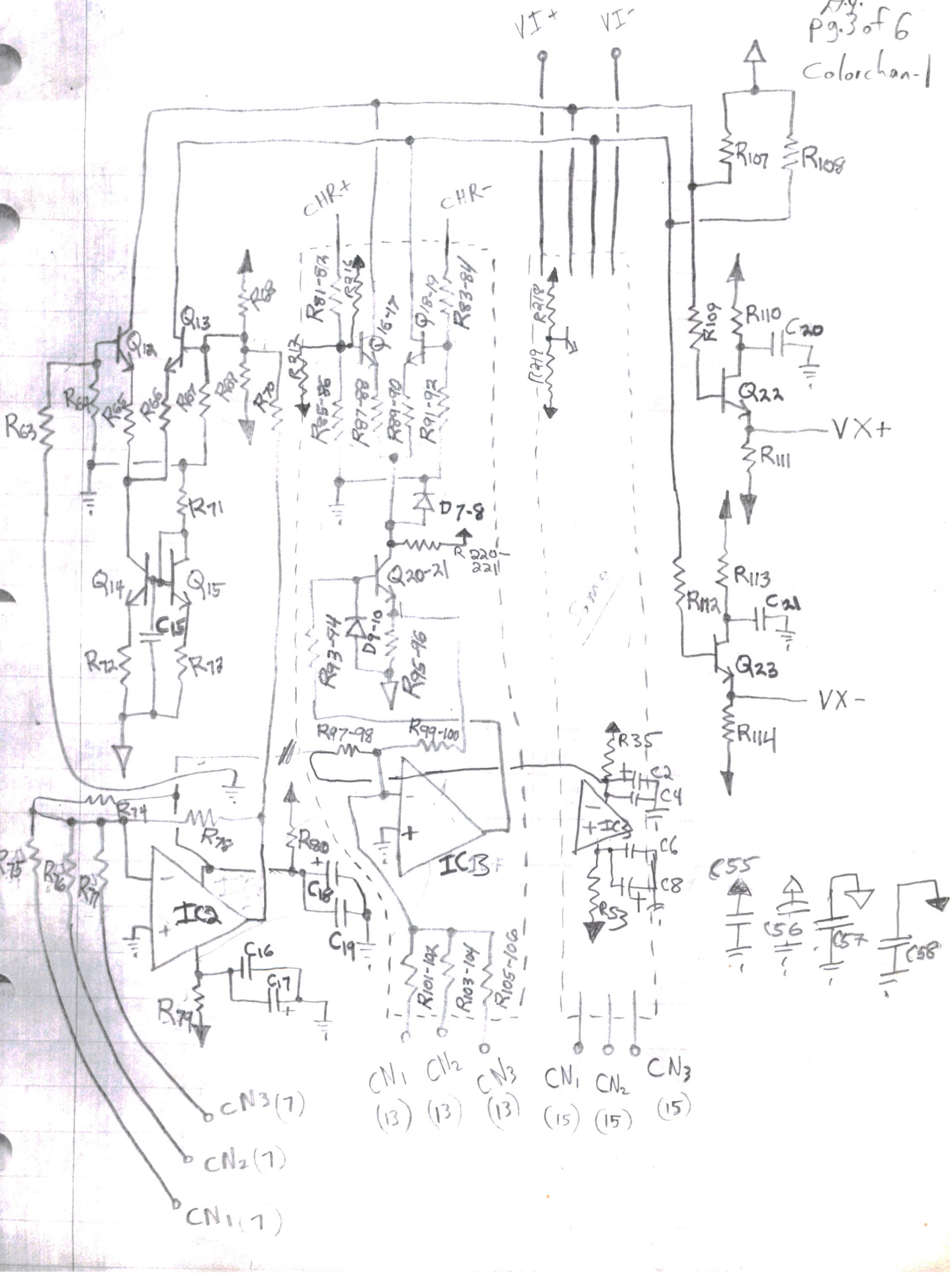
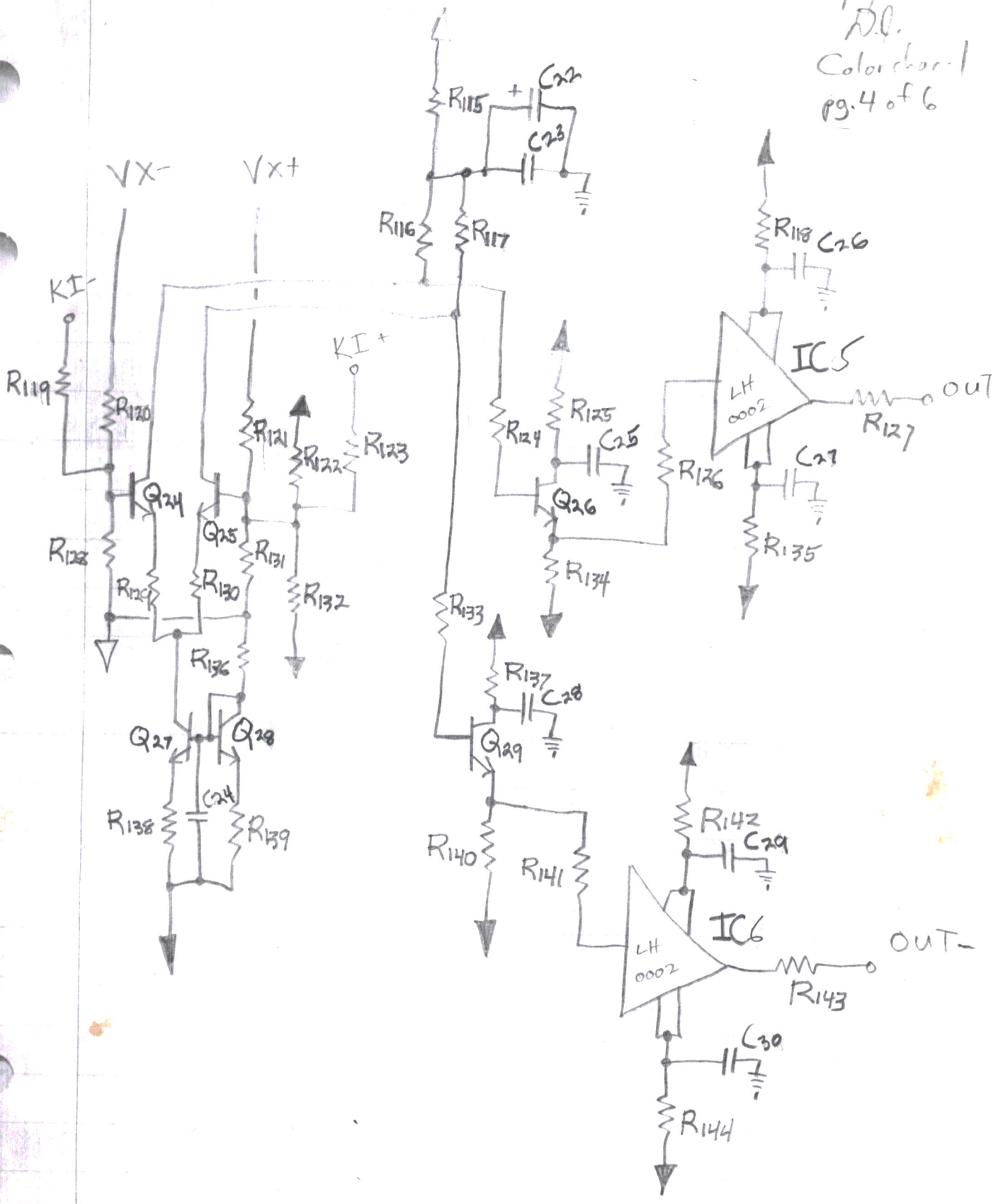
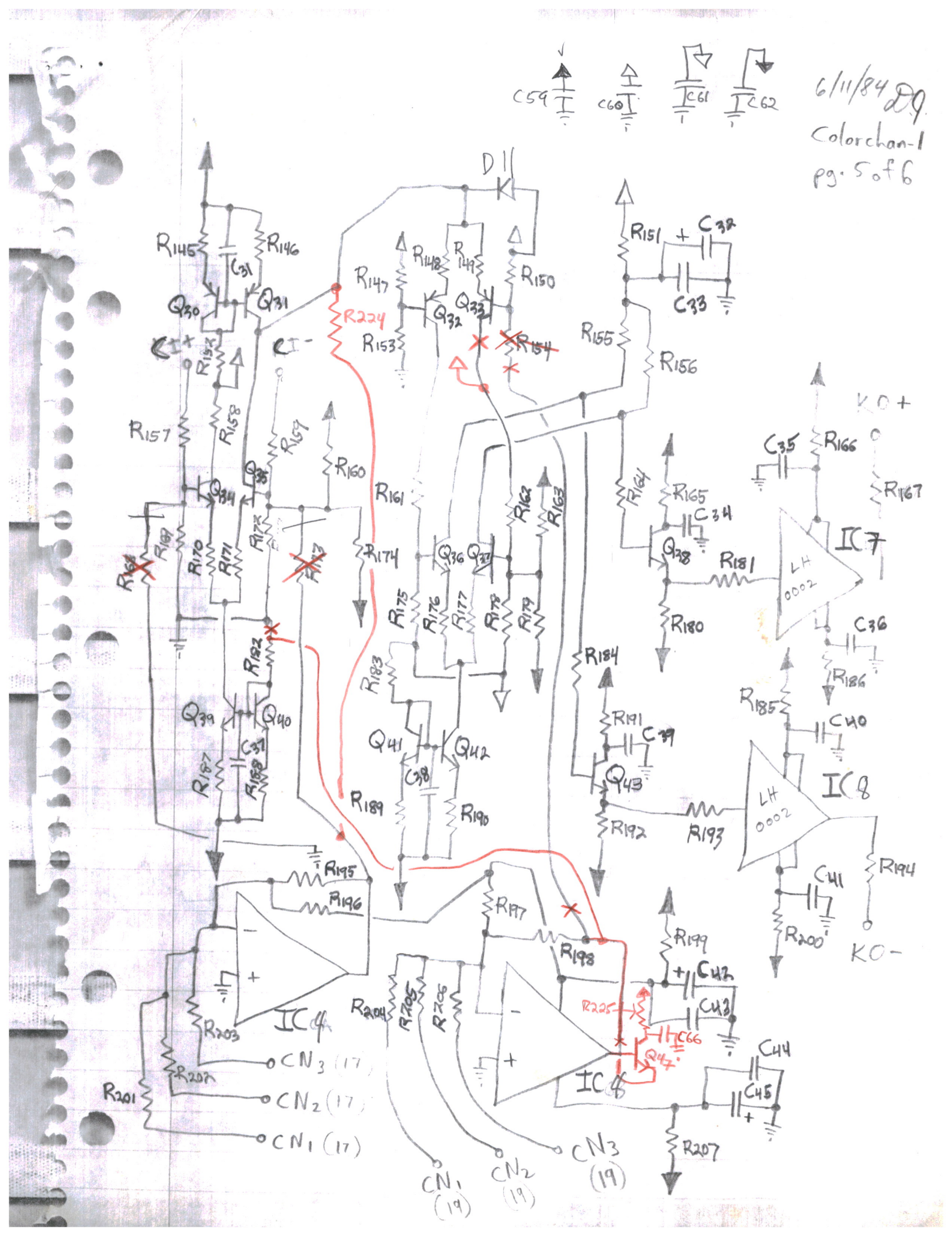
D.G.
Pg. 3 of 6
Colorchan-1

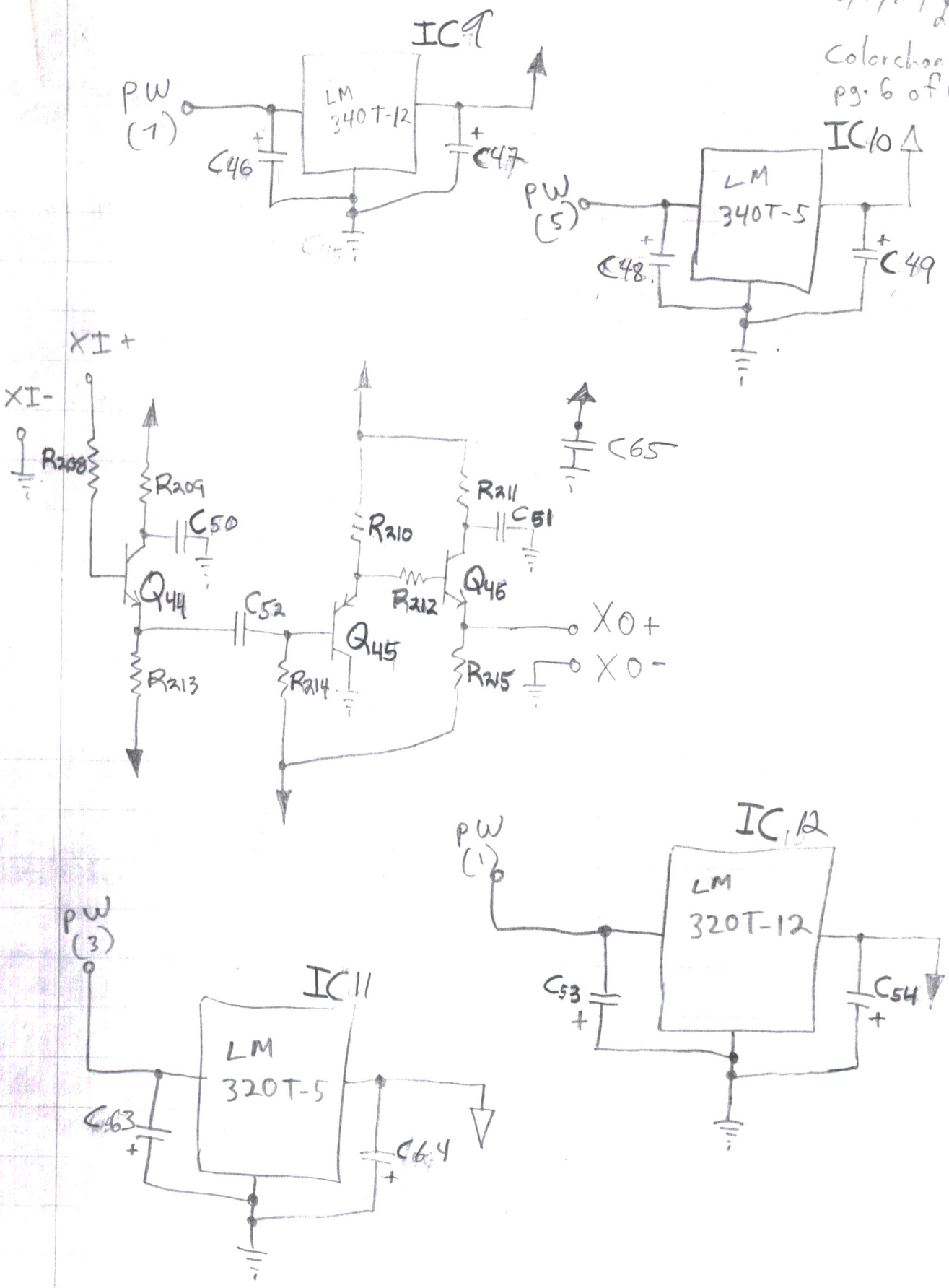


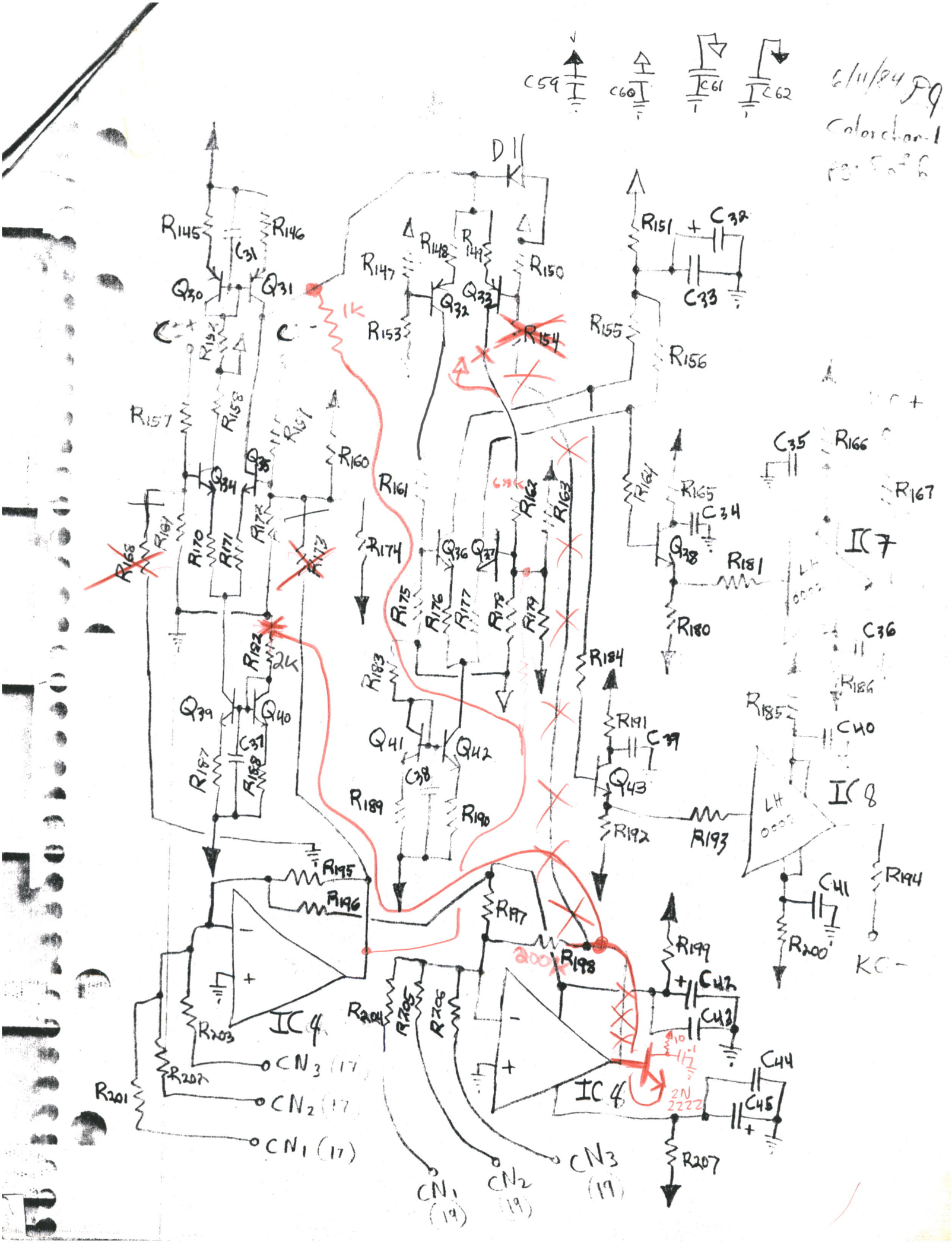
6/11/84
D.C.
Color chart
pg. 4 of 6




C59
C60
C61
C62
6/11/84 29
Colorchan-1
pg. 5 of 6
D1
R145
R146
C31
Q30
Q31
R147
R148
R149
R150
Q32
Q33
R153
R154
R151
C32
C33
R155
R156
R224
R157
R158
R159
Q34
Q35
R160
R161
R162
R163
R164
R165
C34
Q38
R181
R180
IC7
LH 0002
KO+
C35
R166
R167
C36
R186
R185
C40
IC8
R184
R191
C39
Q43
R192
R193
R194
C41
R200
KO-
R168
R169
R170
R171
R172
R173
R174
Q36
Q37
R175
R176
R177
R178
R179
R183
Q39
Q40
R187
C37
R188
Q41
Q42
C38
R189
R190
R195
R196
R197
R198
R199
C42
C43
C44
C45
R207
IC4
R203
R204
R205
R206
R225
C66
Q44
R201
R202
CN3 (17)
CN2 (17)
CN1 (17)
CN1 (19)
CN2 (19)
CN3 (19)

6/11/84 DD.
Colorchaos-1
pg. 6 of 6




C59
C60
C61
C62
6/11/84 P9
Color chan-1
D1
R145
R146
C31
Q30
Q31
R147
R148
R149
R150
Q32
Q33
R153
R154
R151
C32
C33
R155
R156
R157
R158
R159
R160
Q34
Q35
R161
R162
R163
R164
R165
C34
Q38
R181
R180
C35
R166
R167
IC7
R168
R169
R170
R171
R172
R173
R174
Q36
Q37
R175
R176
R177
R178
R179
R182
2K
Q39
Q40
R183
R184
R185
R186
C40
R187
C37
R188
Q41
Q42
C38
R189
R190
R191
C39
Q43
R192
R193
IC8
R194
C41
R200
R195
R196
R197
R198
R199
C42
C43
C44
C45
R203
R204
R205
R206
IC4
IC6
2N2222
R201
R207
CN3 (17)
CN2 (17)
CN1 (17)
CN1 (19)
CN2 (19)
CN3 (19)

Seretas Notes

E+C. Dave Jones (colonizer) 1369 - Stapled packet

1st page – not original
2nd page – original
3rd page – not original
4th page – original
5th page – original
6th page – original

COLOR CHAN 1

Q		Q	QUANTITY/BOARD
4	LF 353	2	1.5K
4	LH 0002CH	2	2 K
1	LM 340T-12	10	3 K
1	LM 340T-5	6	5.1 K
1	LM 320T-5	4	10 K
1	LM 320T-12	5	20K
41	2N3904	5	56K
5	2N3906	1	75K
47	.1 µf disc	28	100K
8	22µf 25V Elec	1	200K
4	.1µf 35V TANT	5	1 M
2	22µf 16V TANT	2	750
2	22µf 25V TANT	6 + 3	20 PIN HEADER
10	1N4148	2	100µf 25V
46	10 Ω	4	8 PIN DIP
4	75		
1	100		
4	150		
3	200		
1	220		
26	300		
2	330		
19	390		
4	510		
1	620		
2	820		
9	1K		

COCORIZER

IC 1 LF 353 ↑ 1
IC 2 LF 353
IC 3 LF 353
IC 4 LF 353
IC 5 LH 0002 CH
IC 6 LH 0002 CH
IC 7 LH 0002 CH
IC 8 LH 0002 CH

IC 9 LM 340 T-12
IC 10 LM 340 T-5
IC 11 LM 320 T-5
IC 12 LM 320 T-12

Q 1-3 2N 3904
Q 4-6 2N 3904
Q 7-9 2N 3904
Q 10 2N 3904
Q 11 2N 3904
Q 12 2N 3904
Q 13 2N 3904
Q 14 2N 3904
Q 15 2N 3904
Q 16-17 2N 3904
Q 18-19 2N 3904
Q 20-21 2N 3904
Q 22 2N 3904
Q 23 2N 3904
Q 24 2N 3904
Q 25 2N 3904
Q 26 2N 3904
Q 27 2N 3904
Q 28 2N 3904
Q 29 2N 3904
Q 30 2N 3906
Q 31 2N 3906
Q 32 2N 3906
Q 33 2N 3906
Q 34 2N 3904

R 36
R 54

Q 35	2N 3904	R 37-39	56k	R74	
Q 36	2N 3904	R 40-42	20k	R75	100k
Q 37	2N 3904	R 43-45	100k	R76	100k
Q 38	2N 3904	R 46-48	100k	R77	100k
Q 39	2N 3904	R 49-51	100k	R78	100k
Q 40	2N 3904	R 52-53	10	R79	10
Q 41	2N 3904	R 55	620	R80	10
Q 42	2N 3904	R 56	620	R81 1.5k	R82 2k
Q 43	2N 3904	R 57	390	R83 1.5k	R84 2k
Q 44	2N 3904	R 58	10	R85-86	300
Q 45	2N 3906	R 59	3k	R87-88	10
Q 46	2N 3904	R 60	390	R89-90	10
Q 47	PN 2222 *	R 61	10	R91-92	300
R 1-3	5.1 k	R 62	3k	R93-94	1k
R 4-6	5.1k	R 63	10k	R95-96	390
R 7-9		R 64	300	R97-98	56k
R 10-12	300	R 65	10	R99-100	20k
R 13-15	10	R 66	10	R101-102	100k
R 16-18	10	R 67	300	R103-104	100k
R 19-21	300	R 68		R105-106	100k
R 22-24		R 69		R107	150
R 25-27	1 MEG	R 70	10k	R108	150
R 28-30	390	R 71	220	R109	390
R 31-33	1k	R 72	200	R110	10
R 34-35	10	R 73	200	R111	3k

COLORIZER

p3

R112	390	R137	10	R162	6.8k
R113	10	R138	300	R163	
R114	3k	R139	300	R164	390
R115	10	R140	3k	R165	10
R116	1k	R141	390	R166	10
R117	1k	R142	10 NOT IN	R167	75
R118	10	R143	75	R168	—
R119	10k	R144	10 NOT IN	R169	300
R120	1k	R145	300	R170	10
R121	1k	R146	300	R171	10
R122		R147	300	R172	300
R123	10k	R148	10	R173	—
R124	390	R149	10	R174	
R125	10	R150	300	R175	300
R126	390	R151	10	R176	10
R127	75	R152	330	R177	10
R128	300	R153	75k	R178	300
R129	10	R154	—	R179	
R130	10	R155	820	R180	3k
R131	300	R156	820	R181	390
R132		R157	150	R182	2k
R133	390	R158	100	R183	330
R134	3k	R159	150	R184	390
R135	10	R160		R185	10
R136	330	R161	510	R186	10

R187	510	R 212	390	C1,2,7,8 22µf 25v
R188	510	R 213	3k	C3-6 .1µf
R189	300	R 214	200k	C9 .1 | C11 .1
R 190	300	R 215	3k	C10 .1 | C12 .1
R 191	10	R 216		C13 .1
R 192	3k	R217		C14 .1
R 193	390	R 218		C15 .1
R194	75	R219		C16 .1
R 195	100k	R 220	1MEG	C17 22µf 25v ELEC
R 196		R 221	1MEG	C18 22µf 25v ELEC
R 197		R 222	200	C19 .1
R 198	200k	* R223	10k BOTTOM	C 20 .1
R 199	10	R224	1k * BOTTOM	C 21 .1
R 200	10	R225	10 *	C22 100 µf 25v ELEC
R 201	100k			C23 .1
R 202	100k			C24 .1
R 203	100K			C25 .1
R 204	100k			C 26 .1
R 205	100k			C27 .1
R 206	100k			C28 .1
R 207	10			C29 .1
R 208	390			C30 .1
R 209	10			C31 .1
R 210	10k			C32 100 µf 25v ELEC
D 211	10			C33 .1

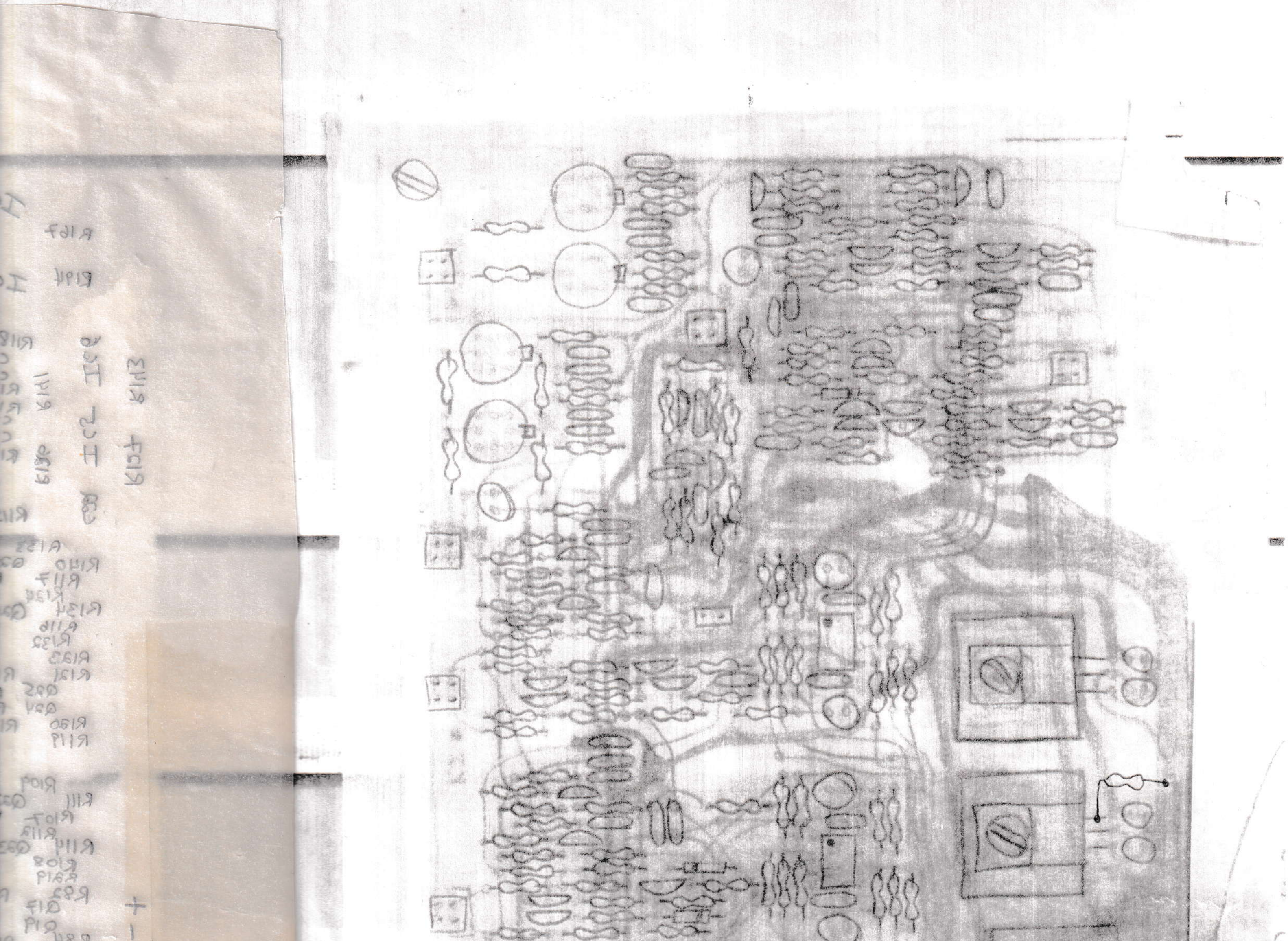
COLORIZER
P.5

C34	.1
C35	.1
C36	.1
C37	.1
C38	.1
C39	.1
C40	.1
C41	.1
C42	22µf 25V ELEC
C43	.1
C44	.1
C45	22µf 25V ELEC
C46	.1µf 50V OR 35V TANT.
C47	22µf 25V TANT.
C48	.1µf 35V TANT
C49	22µf 16V TANT
C50	.1
C51	.1
C52	.1
C53	.1µf 35V TANT
C54	22µf 25V TANT
C55	.1
C56	.1
C57	.1
C58	.1

D1-3	IN 4148
D4-6	IN 4148
D7-8	IN 4148
D9-10	IN 4148
D11	IN 4148

C59	.1
C60	.1
C61	.1
C62	.1
C63	.1µf 35V TANT.
C64	22µf 16V TANT.
C65	.1
C66	.1 *

IC7
C35
R166
R181
R186
C36
C40
R185
R193
R200
C41
R167
R194
IC8
Q43
R192
R189
R191
C39
C33
C32
R180
R164
R165
R179
R178
R163
R162
R156
R155
Q37
Q36
R161
R177
R176
R175
Q38
C34
Q42
Q41
R183
C61
C62
R190
R189
C38
IC6
R143
R118
C26
C27
R135
R142
C29
C30
R144
R141
IC5
R127
R126
C60
C59
R151
R147
R148
R149
R150
R153
Q32
Q33
R154
R160
R174
R159
R168
R215
R212
Q46
R213
C51
Q45
Q44
D11
R146
R145
Q31
Q30
Q35
Q34
C31
R152
R158
R172
R171
R170
R169
R157
R173
Q39
Q40
R182
R187
R188
C37
C22
R115
C23
R133
C28
R140
Q29
R117
R124
R137
C25
R134
Q26
R116
R134
R132
R122
R123
R210
R211
C50
R209
R208
C55
R199
R198
R197
C42
C43
R196
R195
IC4
C44
C45
R206
R205
R204
R203
R202
R201
IC12
C53
C54
R121
R131
Q27
R138
Q25
R130
Q28
C24
Q24
R129
R139
R120
R128
R136
R207
R119
C58
C56
R109
C20
R111
Q22
R110
R107
R112
C21
R114
Q23
R108
R113
R219
R218
C55
C57
R35
R18
R98
C2
C4
R97
R99
R222
IC11
C64
C63
R82
R86
Q21
D10
R96
R106
R102
R104
IC3
R105
R101
R103
C6
C8
Q17
R88
R94
Q19
R90
D8
+
-
R84
R92
R221
R217
R216
D9
R81
R85
Q20
R95
R53
Q16
R87
R93
R80
Q18
R89
D7
R83
R91
R220
R71
IC10
R69
R68
R78
R74
C18
R63
R64
Q14
R72
C19
R39
R43
Q12
R65
Q15
Q13
R66
R73
R70
R67
C15
IC2
R77
R76
R75
C16
R51
R48
R45
C53
C54
C11
C12
C17
C52
C51
R60
C14
R62
Q11
R79
R55
R61
R57
C13
C9
C10
R34
R59
Q10
R56
R58
R41
R38
C1
R24
R9
D6
R37
R40
R6
R21
Q9
R30
C3
Q6
R18
R33
IC9
Q3
R15
D3
IC1
R3
R12
R27
R50
R47
R44
R23
R8
D5
R49
R46
R42
R5
R20
Q8
R29
C5
Q5
R17
R32
Q2
R14
D2
C7
R2
R11
R26
R52
R22
R7
D4
R4
R19
Q7
R28
Q4
R16
R31
Q1
R13
D1
R1
R10
R25



FIRST Meeting: Tuesday @ 2:00 p.m.
Wednesday after 1:00 p.m.
Thursday after 12:00 p.m.

Friday @ 1:00 p.m

1 Output Amplifier
2 Aux. Out: Jones Colorizer 1
3 Aux. Out: Jones Colorizer 2
4 Aux. Out: Jones Colorizer 3&4
5 Aux. Out: SAID or CAT
6 Sequencer 1
7 Sequencer 2
8 Sequencer 3
9 Sequencer 4
10 Spare
11 Paik/Abe Synthesizer 1
12 Paik/Abe Synthesizer 2
13 Paik/Abe Synthesizer 3
14 Paik/Abe Synthesizer 4
15 Paik/Abe Synthesizer 5
16 Paik/Abe Synthesizer 6
17 Paik/Abe Synthesizer 7
18 Voltage Control Amp. 1
19 Voltage Control Amp. 2
20 Voltage Control Amp. 3
21 Mixer 1
22 Mixer 2
23 Mixer 3
24 Mixer 4
25 Keyer 1A
26 Keyer 1B
27 Keyer 1C
28 Keyer 2A
29 Keyer 2B
30 Keyer 2C
31 Spare SEG CH.1
32 Spare SEG CH.2
33 Spare Jones Key 1
34 Spare Jones Key 2
35 Spare Jones Key 3
36 Monitor 1 Spare
37 Monitor 2 Spare
38 Monitor 3 Spare
39 Monitor 4 Spare
40 Spare Wobbulator

A Camera A
B Camera B
C Camera C
D Camera D
E Camera E
F Camera F
G Sequencer Out
H Paik/Abe Synthesizer
J Video Line 1
K Video Line 2
Off

M Aux. In. Jones Colorizer Out
N SEG Out
P SAID Out
R Jones Keyer Out
S Voltage Control Amp. 1 Out
T Voltage Control Amp. 2 Out
U Voltage Control Amp. 3 Out
V Mixer Out
W Key 1 Out
X Key 2 Out
Off

BASIC TUNING OF THE JONES COLORIZER

COLORIZER MODES AND PARAMETERS

THE JONES COLORIZER IS A 4 CHANNEL COLORIZER AND MIXER WITH 4 INPUTS AND 1 OUTPUT OR 4 INPUTS AND 4 OUTPUTS. THE CHANNELS ARE IDENTICAL, EACH WITH PARAMETERS OF GAIN, PEDESTAL, CHROMA LEVEL, RED, GREEN, BLUE AND KEY CLIP. IN THE STANDARD 4 INPUT/1 OUTPUT MODE, THE 4 CHANNELS MIX WITH EACH OTHER; THE MIX IS OVERALL ADJUSTABLE WITH A MASTER GAIN AND PEDESTAL CONTROL. ALL OF THESE MANUAL CONTROLS ARE VOLTAGE CONTROLLABLE WITH A SET OF JACKS, ONE FOR EACH SEPARATE PARAMETER. IN THE 4 INPUT/4 OUTPUT MODE THERE IS NO OVERALL GAIN CONTROL OF ALL THE CHANNELS, ONLY 4 SEPARATE CHANNELS WITH SEPARATE CONTROLS.

TUNING GAIN AND PEDESTAL

START BY TURNING "OFF" ALL THE CONTROLS. THIS IS DONE BY TURNING THE POTENTIOMETERS TO THE COMPLETE COUNTER-CLOCKWISE POSITION. SET THE MAIN GAIN AND PEDESTAL TO THE 12 O'CLOCK POSITION FOR A COARSE PRELIMINARY SETTING. TURN UP THE PEDESTAL CONTROL OF CHANNEL 1. IF THERE IS NO BRIGNTNESS CHANGE TO THE IMAGE, TURN THE KEY CLIP OF CHANNEL 1 TO THE OPPOSITE OR FULL CLOCKWISE POSITION. ADJUST THE PEDESTAL AGAIN. NOTICE THE BRIGNTNESS VARY. TURN UP THE GAIN CONTROL. THIS WILL DEFINE THE CONTRAST OF THE IMAGE PATCHED INTO INPUT 1 OF THE COLORIZER. ADJUSTING BOTH THE GAIN AND PEDESTAL WILL ALLOW YOU TO SET THE GRAY LEVEL AND BRIGHTNESS SPREAD OF THAT CHANNEL OF THE COLORIZER TO DUPLICATE THAT OF THE INCOMING SIGNAL OR SOME DESIRED VARIATION. AN ADJUSTMENT AT THAT POINT OF THE MAIN GAIN AND PEDESTAL WILL FINE-TUNE THOSE FUNCTIONS FOR THE OVERALL OUTPUT.

COLOR

TO ADD COLOR TO THE INCOMING SIGNAL, TURN UP THE CHROMA LEVEL CONTROL AND RED CONTROL. THEN ADJUST THE COLOR PHASE CONTROL ON THE OUTPUT AMP DEVICE. SET THE PHASE SO THE IMAGE IS RED. TURN DOWN THE RED CONTROL ON CHANNEL 1 OF THE COLORIZER. WITH THE OUTPUT AMP PHASE CONTROL SET SO THAT RED ON THE COLORIZER IS RED, THEN GREEN WILL BE GREEN AND BLUE CONTROL WILL BE BLUE. ANY MIX OF THE RED, GREEN AND BLUE SHOULD GIVE YOU THE COLOR RESULTING FROM THAT PARTICULAR R,G,B ADDITIVE COLOR MIXING.

RECORDING COLOR LEVELS

A USEFUL GUIDE FOR THE BEST COLOR RECORDING RESULTS IS TO SET THE COLOR AT THE LOW END OF THE EFFECTIVE RANGE FOR CHROMA LEVEL AND THE PARTICULAR RED, GREEN, BLUE COMBINATION. THIS MEANS TO FIRST DETERMINE ROUGHLY THE DESIRED AMOUNT OF CHROMA AND SPECIFICALLY WHICH COLOR AND THEN TURN THE CHROMA LEVEL DOWN TO FIND THE BOTTOM OF THE EFFECTIVE RANGE, THAT IS TO LOCATE THE

LOWEST LEVEL OF THE CHROMA WHICH RESULTS IN THE DESIRED COLOR SATURATION. THIS IS ALSO THE CASE WITH RED, GREEN AND BLUE CONTROLS.

MIXING AND BALANCING COLOR LEVELS

IF FOR EXAMPLE YOU ARE DEFINING YELLOW, YOU MIX RED AND GREEN. FIND THE LEAST AMOUNT OF RED AND GREEN RELATIVE TO THE CHROMA SETTING WHICH RESULTS IN THE DESIRED YELLOW. THERE IS NO NEED FOR BLUE, FOR EXAMPLE, IN A PURE YELLOW. EVEN THOUGH YELLOW COULD PROBABLY BE DEFINED WITH SOME BLUE, IF THE RED AND GREEN SETTINGS ARE STRONG ENOUGH. IN THIS CASE BLUE IS NOT NECESSARY AND NEEDS TO BE OVER-COMPENSATED FOR, ADDING MORE CHROMA THAN NECESSARY AND POSSIBLY ADDING SOME CHROMA NOISE INTO THE RECORDING.

COLOR AND CONTRAST

ALSO KEEP IN MIND, COLOR IS ALSO DEPENDENT ON THE BRIGHTNESS OR PEDESTAL OF THE VIDEO SIGNAL. AN IMAGE OF PRIMARILY DARK SHADES OF GRAY WILL RENDER THE COLOR SET IN THE CHROMA, RED, GREEN, BLUE SETTING AS A DARK, RICH COLOR. AN IMAGE WITH PRIMARILY LIGHT SHADES OF GRAY WILL RESULT IN A LIGHT COLOR SATURATION. THIS CAN BE SOMEWHAT ALTERED BY ADJUSTING THE PEDESTAL OF THE INCOMING SIGNAL. THE COLOR CAN BE PRIMARILY PLACED IN THE DARK AREAS OF THE IMAGE OR THE BRIGHT AREAS. ALSO THE COLORED IMAGE CAN BE DEFINED SOFTER IF THE GAIN OF THE INCOMING SIGNAL IS SET TO A LOW VIDEO GAIN OR LOW CONTRAST.

KEY CLIP

SO FAR THERE HAS BEEN MENTION OF GAIN, PEDESTAL, CHROMA LEVEL, RED, GREEN AND BLUE PARAMETERS. KEY CLIP IS THE LAST PARAMETER TO BE DESCRIBED. THIS PARAMETER IS A LUMINANCE CLIP, DROPPING OUT GRAY LEVELS OF THE IMAGE INPUT. IT IS INTERNALLY PRESET, DROPPING OUT THE GRAY LEVELS, WHITE TO BLACK OR BLACK TO WHITE PROGRESSIVELY.

FOUR CHANNELS

THESE THEN ARE THE TUNING PARAMETERS AND CONCERNS FOR CHANNEL 1 OF THE COLORIZER. CHANNELS 2,3 AND 4 ARE IDENTICAL WITH THE POSSIBLE EXCEPTION THAT CHANNEL 3 IS OFTEN PRESET INTERNALLY AS A NEGATIVE VIDEO CHANNEL. THE CLIPS ARE ALSO PRESET TO WHITE TO BLACK OR BLACK TO WHITE CLIPPING.

MIXING COMBINATIONS

THE SEPARATE CHANNELS MIX TOGETHER ALLOWING MULTIPLE BLACK AND WHITE AND/OR COLOR COMBINATIONS OF ONE VIDEO SIGNAL INTO ALL FOUR CHANNELS OR 4 SEPARATE VIDEO SIGNALS EACH SEPARATELY

COLORED, CLIPPED AND MIXED OR A COMBINATION OF MULTIPLE AND SEPARATED SIGNALS, COLORED, CLIPPED AND MIXED.

PATCHING ON THE MATRIX

THE INPUTS TO THE COLORIZER ARE LINE 2,3 AND 4 OF THE MATRIX. LINE 2 GOES TO THE JONES COLORIZER CHANNEL 1, LINE 3 TO CHANNEL 2 AND LINE 4 TO CHANNELS 3 AND 4. THE COLORIZER OUTPUT IS LINE M ON THE MATRIX.

TEST RECORDINGS AND COLOR STREAKING

MAKE A TEST RECORDING TO SEE HOW THE VTR RESOLVES THE COLORS YOU HAVE CHOSEN TO USE. MAGENTA IS THE MOST DIFFICULT COLOR FOR 3/4" DECKS TO RECORD. TOO MUCH CHROMA OUT OF THE COLORIZER CAN RESULT IN BANDS OF COLOR STREAKING. IF YOU HAVE STREAKING ON YOUR ORIGINAL RECORDING YOU WILL HAVE IT ON YOUR COPIES. IF COLORS STREAK, REDUCE THE CHROMA LEVEL A BIT AND MAKE ANOTHER TEST RECORDING TO SEE IF ENOUGH ADJUSTMENT HAS BEEN MADE.